

The diagram illustrates a digital signal processing system for a disk recording medium. The components and their interconnections are as follows:

- 100**: DISK (RECORDING MEDIUM) - The source of the signal.
- S1**: Signal output from the disk medium to the reading unit.
- 11**: READING UNIT - Receives the signal from the disk.
- S2**: Signal output from the reading unit to the decoder and the anti-duplication unit.
- 12**: DECODER - Processes the signal from the reading unit.
- S3**: Signal output from the decoder to the D/A converter and the anti-duplication unit.
- 13**: D/A (Digital-to-Analog) converter - Converts the digital signal to an analog signal.
- S4**: Signal output from the anti-duplication unit to the SS additional information generating unit.
- 15**: ANTI-DUPPLICATION CONTROL SIGNAL EXTRACTING UNIT - Extracts control signals from the signal.
- 16**: SS ADDITIONAL INFORMATION GENERATING UNIT - Generates additional information based on the signal from the anti-duplication unit.
- S5**: Signal output from the SS additional information generating unit to the D/A converter.
- 17**: D/A (Digital-to-Analog) converter - Converts the additional information to an analog signal.
- S6**: Signal output from the D/A converter to the adder.
- 14**: Adder (+) - Combines the signals from the D/A converter and the anti-duplication unit.
- S7**: Final output signal from the adder.
- 18**: SYNC SEPARATING UNIT - Separates sync signals from the signal.
- 19**: TIMING SIGNAL GENERATING UNIT - Generates timing signals based on the sync signals.
- CLK, EN, RE, HT**: Control signals output from the timing signal generating unit.

FIG. 2

19

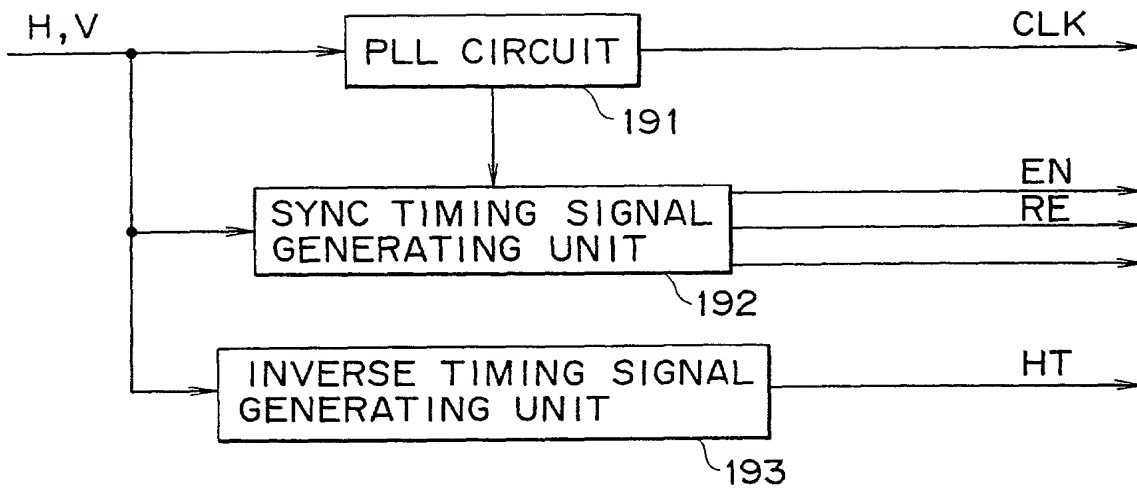


FIG. 3

16

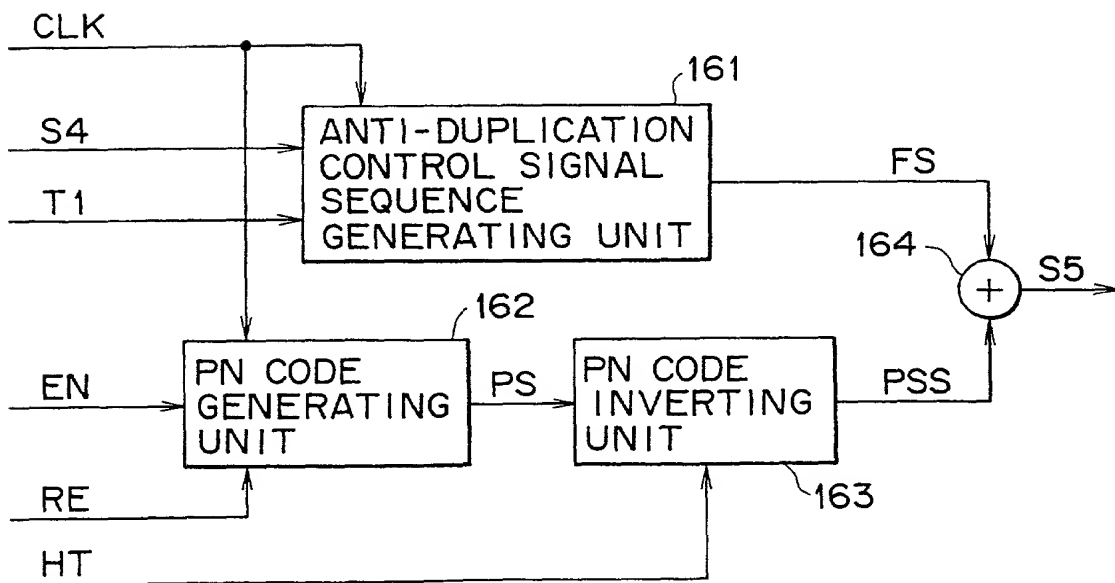


FIG. 5

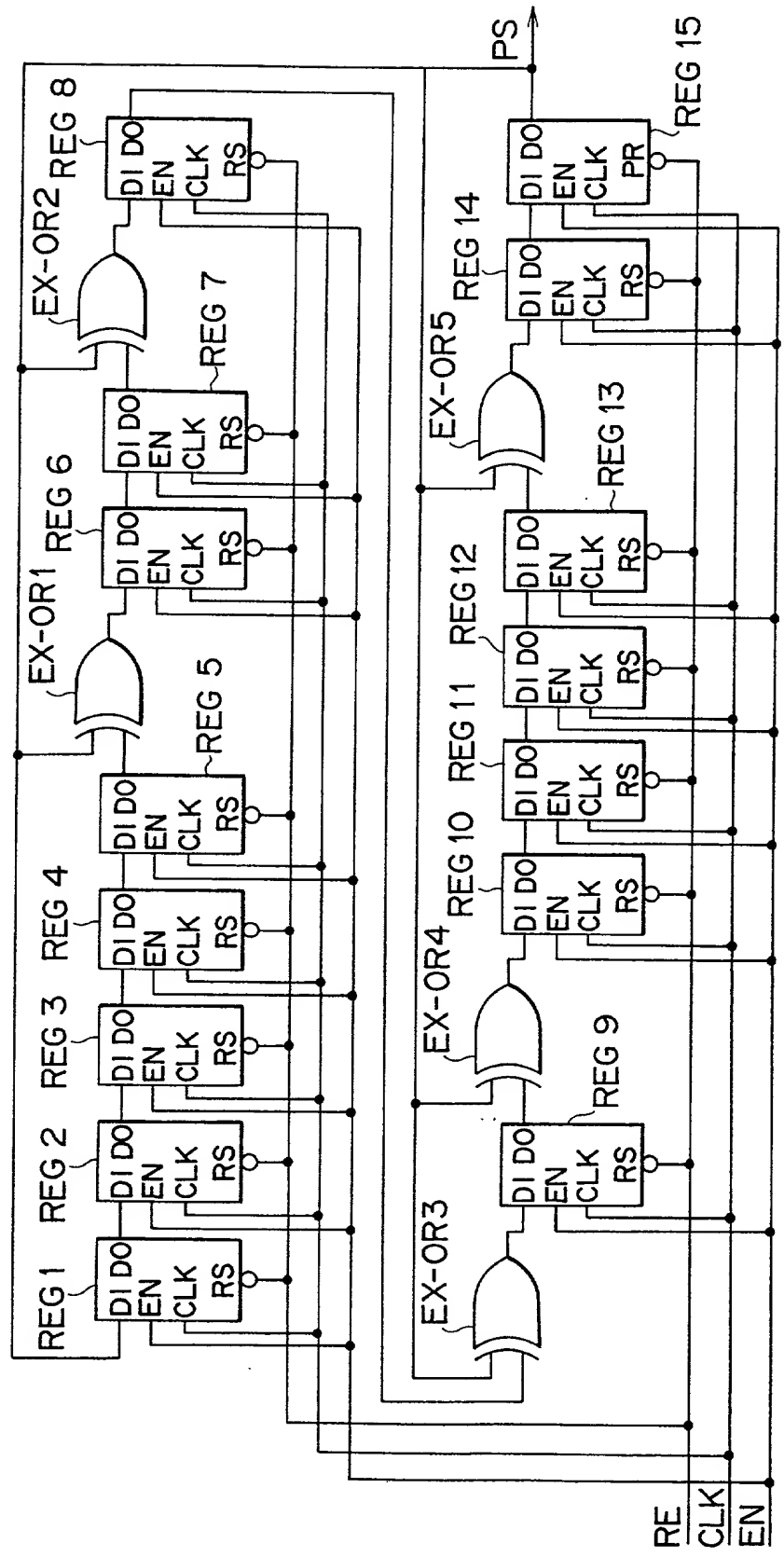
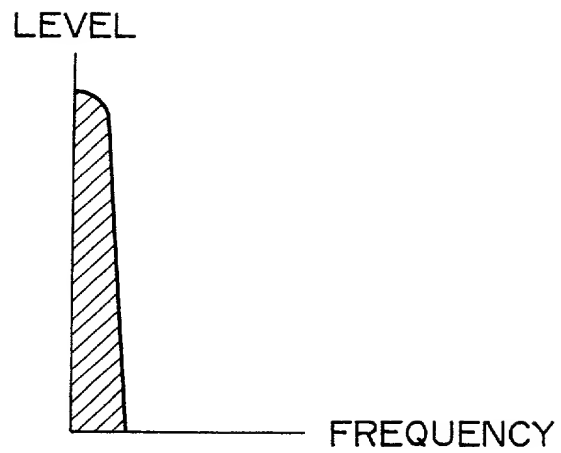
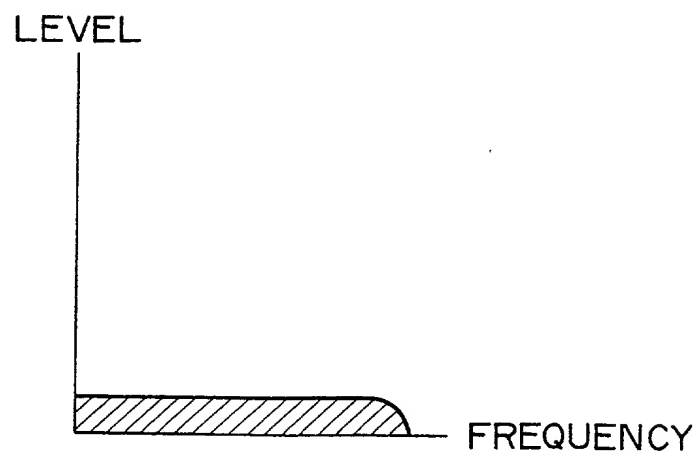


FIG. 6A



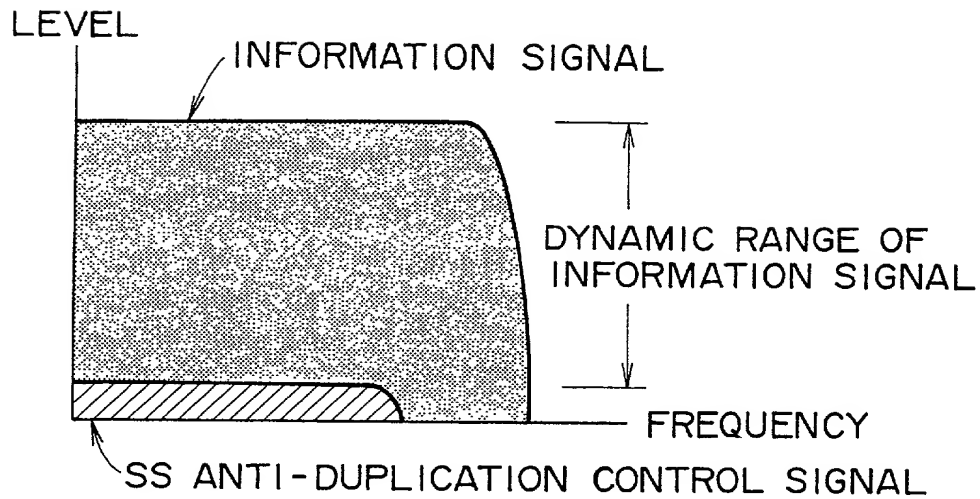
ANTI-DUPLICATION CONTROL SIGNAL SPECTRUM
BEFORE SPECTRAL SPREADING

FIG. 6B



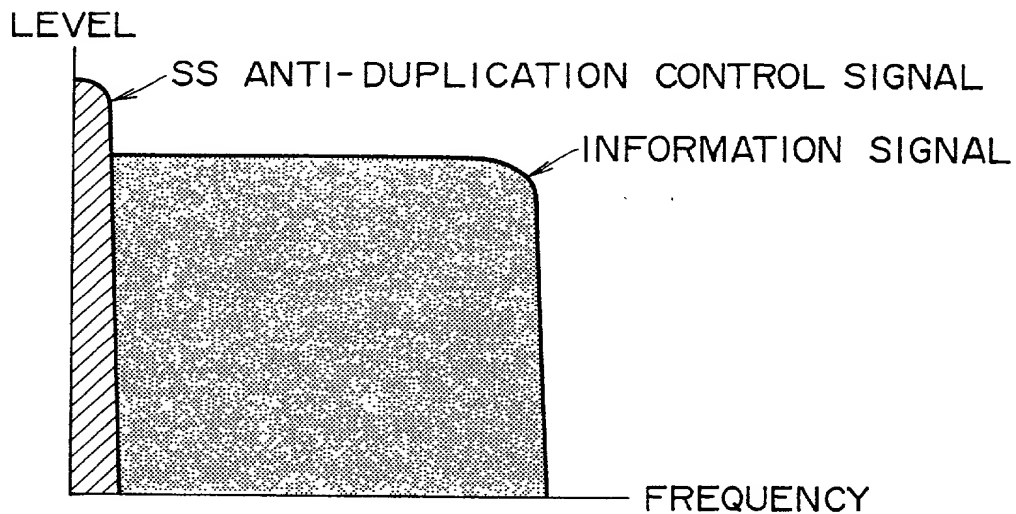
ANTI-DUPLICATION CONTROL SIGNAL SPECTRUM
AFTER SPECTRAL SPREADING

FIG. 6C



SPECTRUM OF INFORMATION SIGNAL ON WHICH SS ANTI-DUPLICATION CONTROL SIGNAL IS SUPERIMPOSED

FIG. 6D



SIGNAL SPECTRUM AFTER SPECTRAL DESPREADING ON RECORDER SIDE

FIG. 7

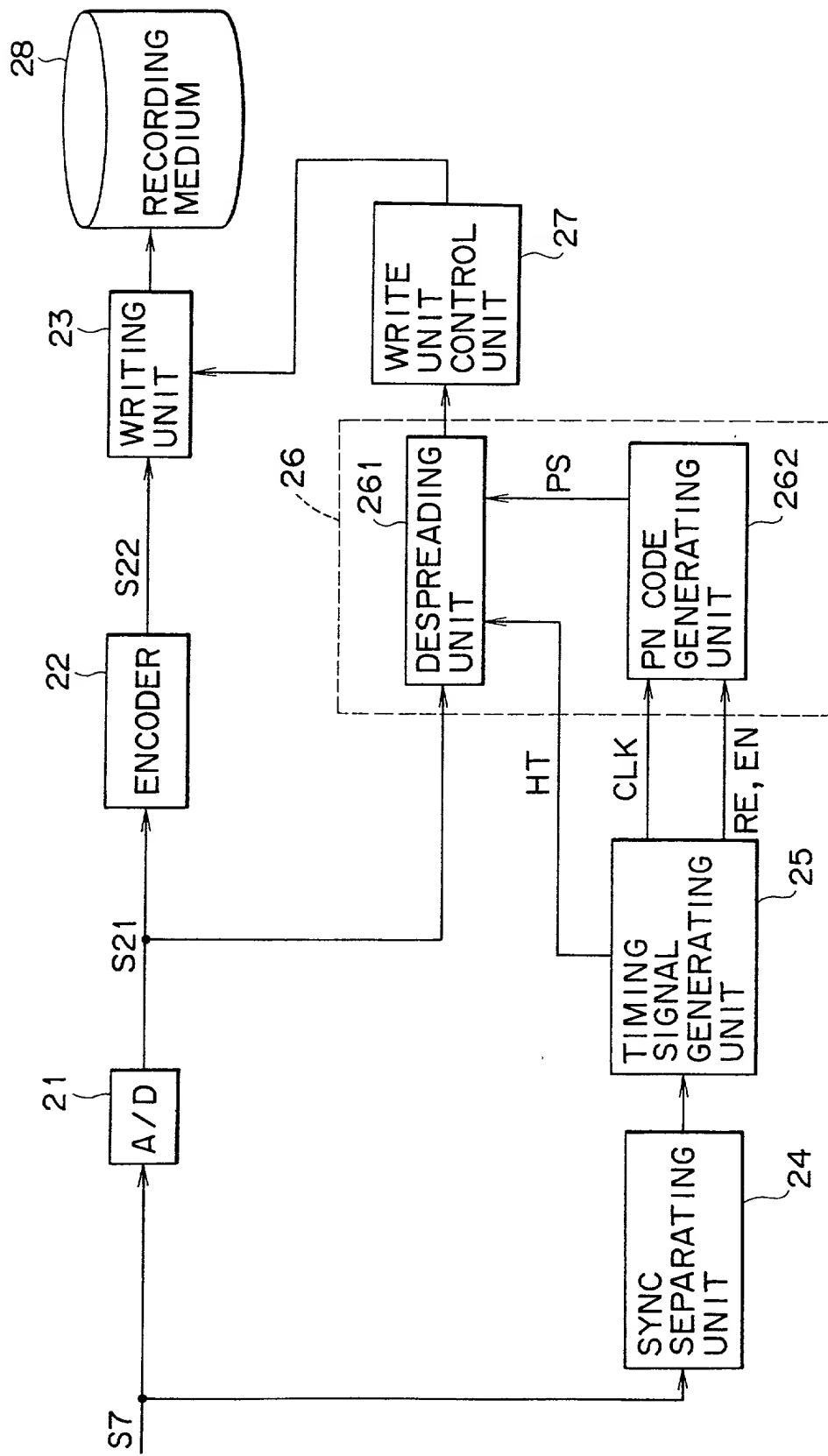


FIG. 8

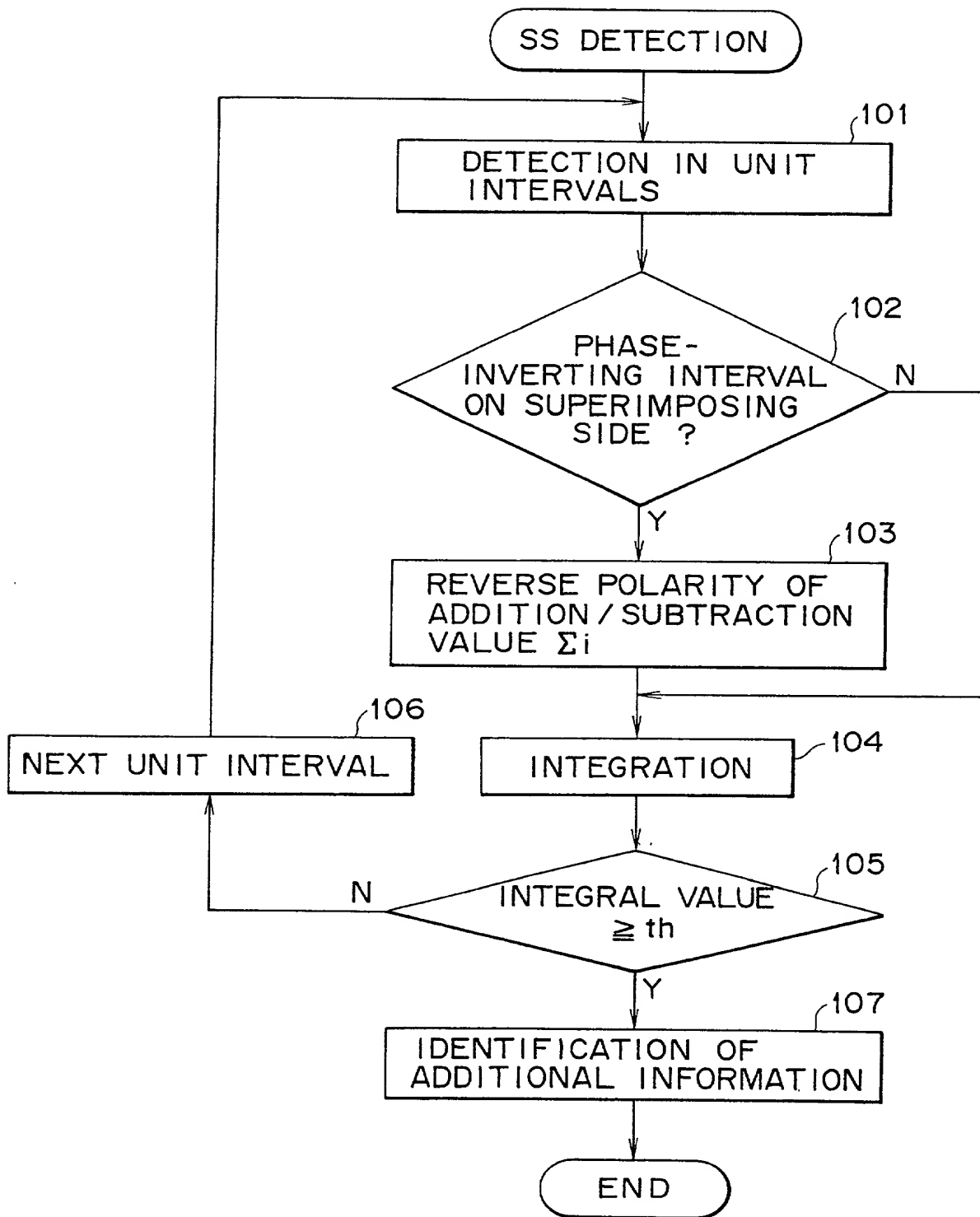


FIG. 9

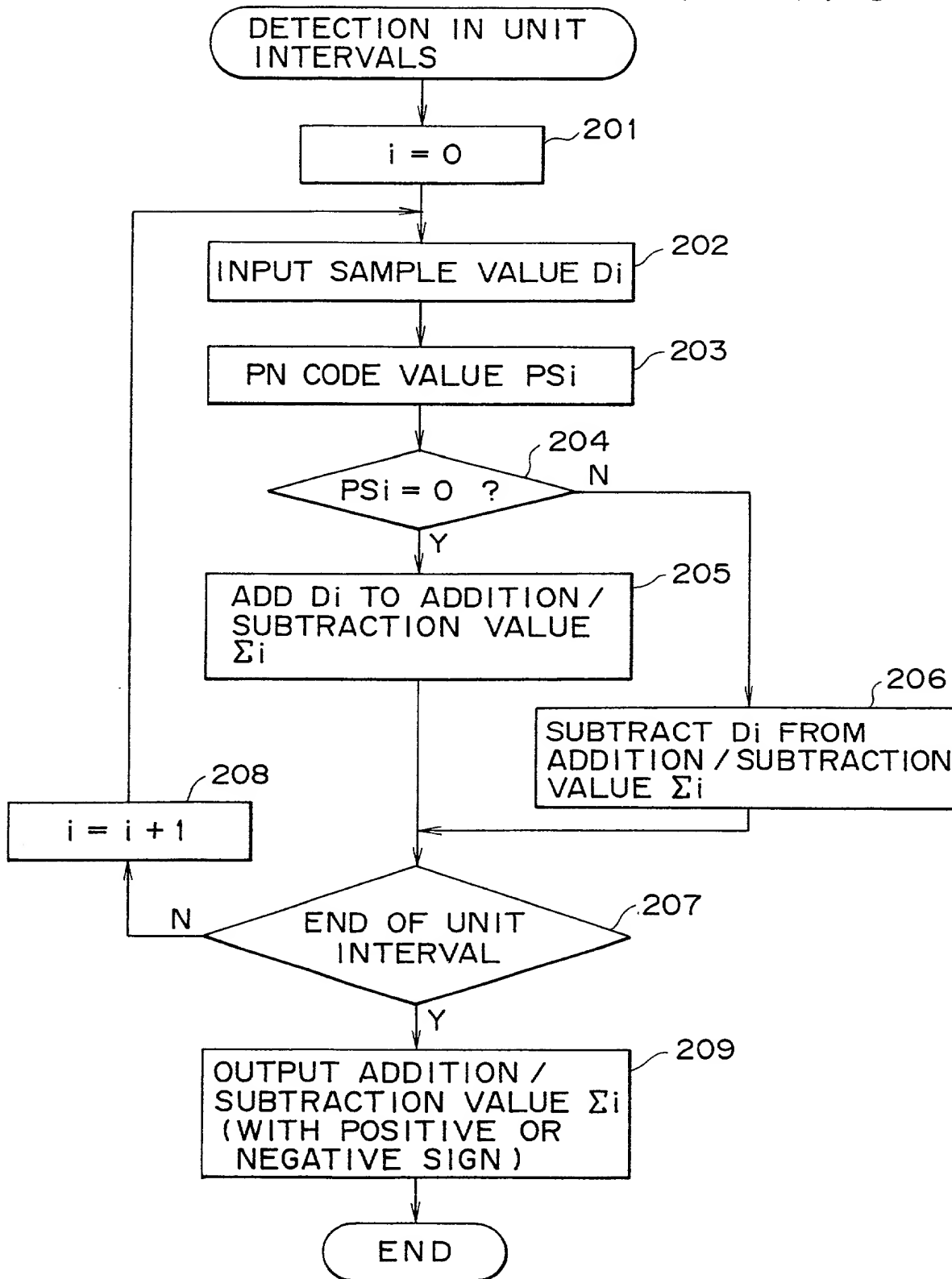


FIG. 10A

ADDITIONAL BIT	⁰ (NON-INVERTING INTERVAL)				⁰ (INVERTING INTERVAL)			
----------------	---	--	--	--	---	--	--	--

FIG. 10B

SS SIGNAL	0	1	1	0	1	0	0	1
-----------	---	---	---	---	---	---	---	---

FIG. 10C

PN CODE (DETECTION SIDE)	0 (+)	1 (-)	1 (-)	0 (+)	0 (+)	1 (-)	1 (-)	0 (+)
-----------------------------	----------	----------	----------	----------	----------	----------	----------	----------

FIG. 10D

A/D OUTPUT (VIDEO PART)	100	200	10	150	100	200	10	150
----------------------------	-----	-----	----	-----	-----	-----	----	-----

FIG. 10E

ADDITION/ SUBTRACTION VALUE	100	-100	-110	40	100	-100	-110	40
--------------------------------	-----	------	------	----	-----	------	------	----

FIG. 10F

D/A OUTPUT (SS SIGNAL PART)	1	-1	-1	1	-1	1	1	-1
--------------------------------	---	----	----	---	----	---	---	----

FIG. 10G

ADDITION/ SUBTRACTION VALUE	1	2	3	4	-1	-2	-3	-4
--------------------------------	---	---	---	---	----	----	----	----

FIG. 11

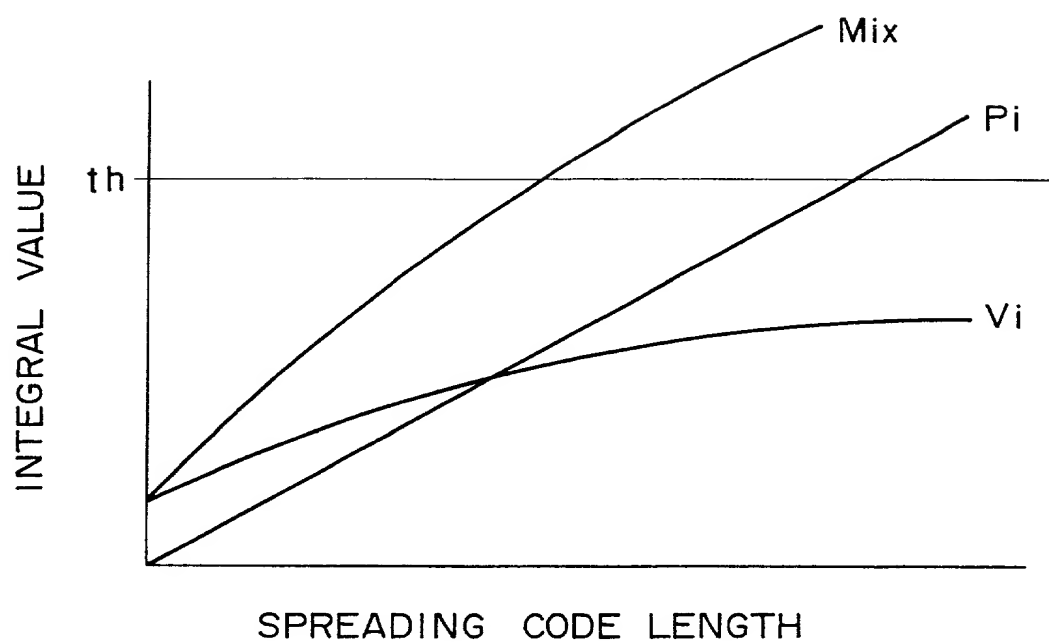
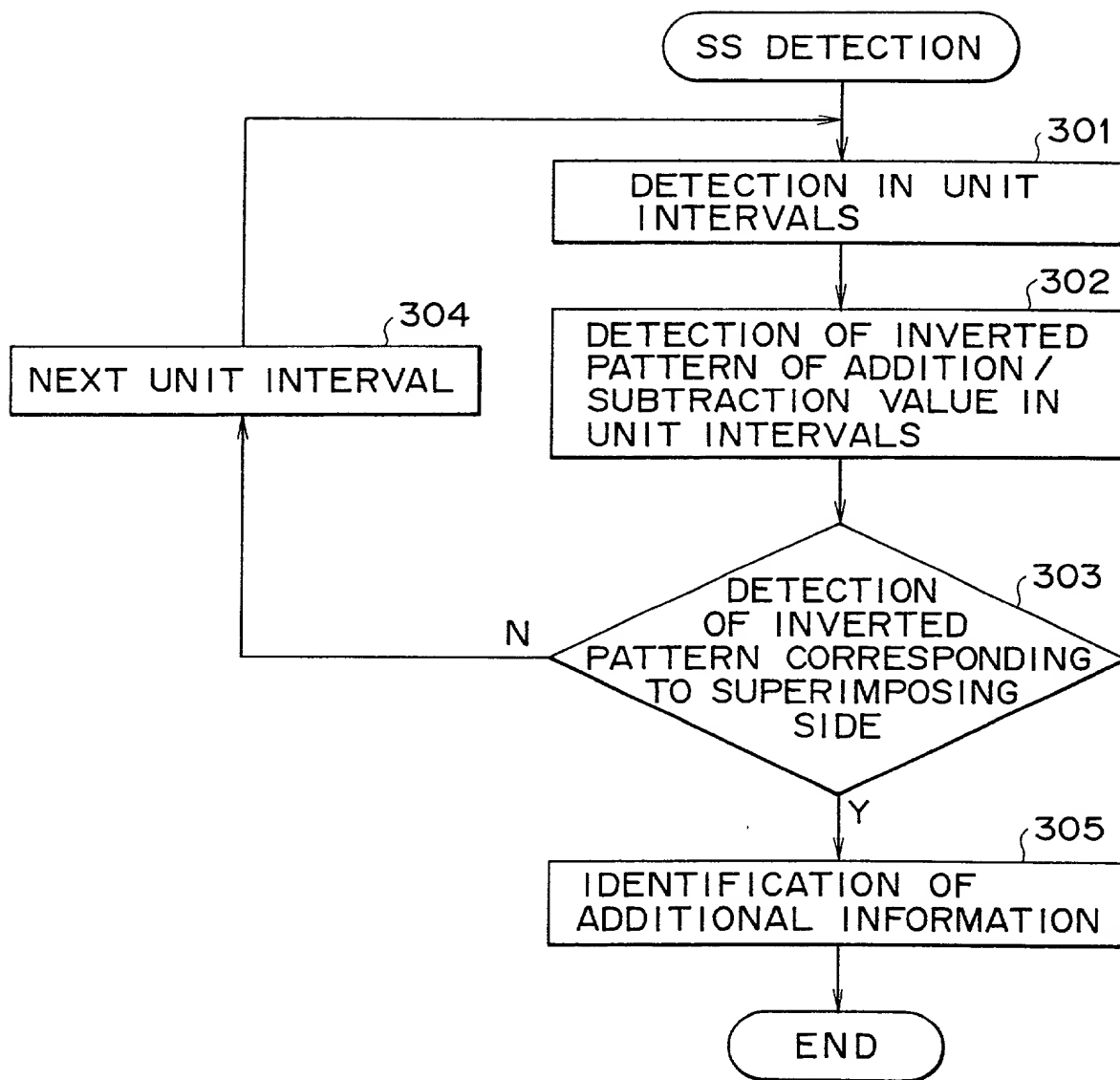


FIG. 12



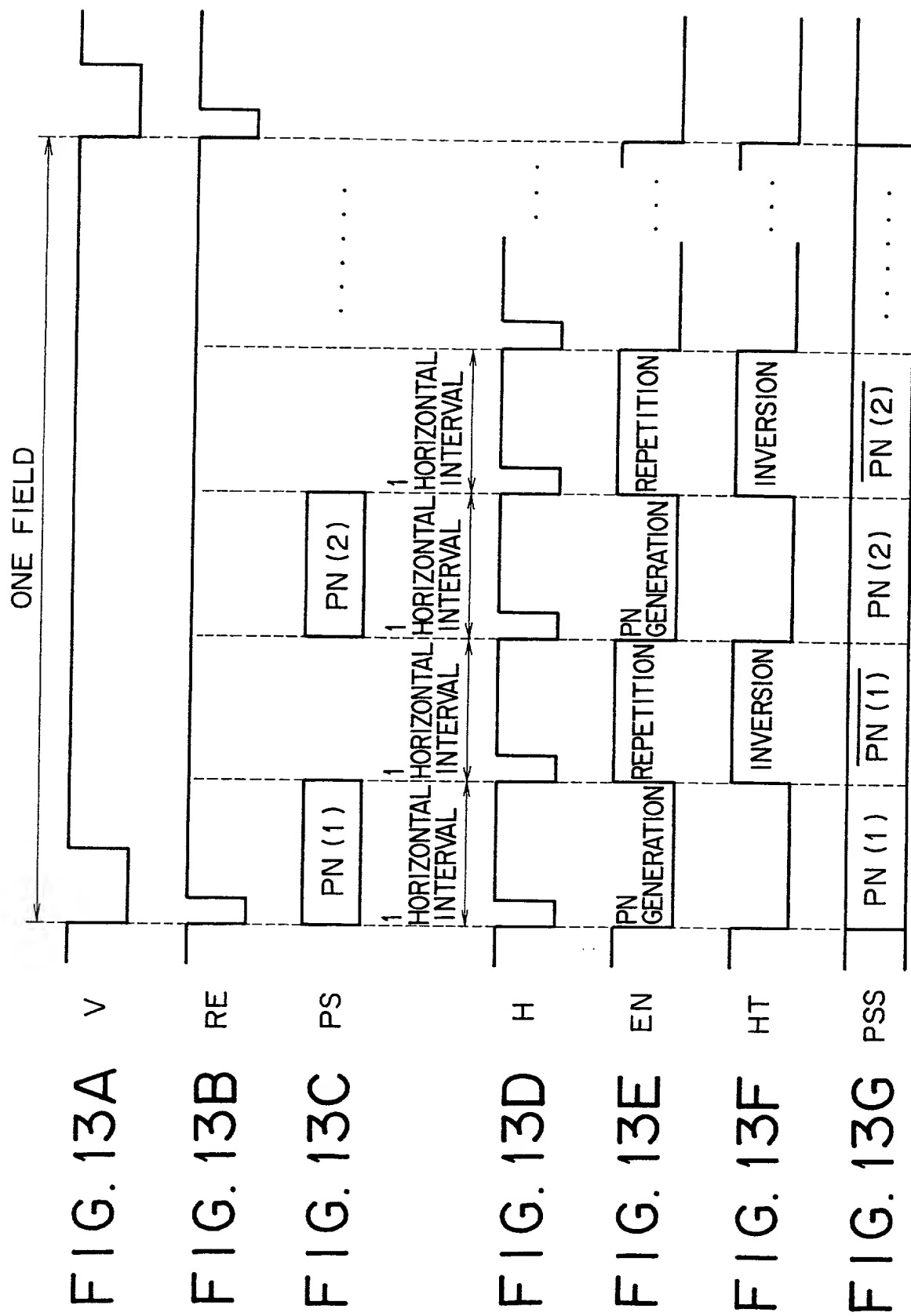


FIG. 14

19

